are arranged as opposed to the side surfaces of the vanes so that the resonance frequency of the mode resulting from the space between the side surfaces of the vanes and surfaces adjacent the inner ends of the pole pieces can be a frequency between the π mode and the π - 1 mode.

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4. The magnetron of Claim $\frac{1}{2}$, wherein the surfaces adjacent the inner ends of the pole pieces or the metal pieces are arranged as opposed to the side surfaces of the vanes so that the resonance frequency of the mode resulting from the space between the side surfaces of the vanes and the surface adjacent the inner ends of the pole pieces can be a frequency within 250 MHz from about the lower limit of the frequency of the π - 1 mode.

m/03